

(12) **United States Patent**
Sung et al.

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(54) **METHODS OF FORMING PRODUCTS WITH FINFET SEMICONDUCTOR DEVICES WITHOUT REMOVING FINS IN CERTAIN AREAS OF THE PRODUCT**

(58) **Field of Classification Search**
CPC H01L 21/823431; H01L 21/823821;
H01L 21/8234; H01L 21/8238
See application file for complete search history.

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(56) **References Cited**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1 day.

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(57) **ABSTRACT**

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One illustrative method disclosed herein includes, among other things, forming a first plurality of fins in the first region of the substrate, a second plurality of fins in the second region of the substrate, and a space in the substrate between two adjacent fins in the second region that corresponds to a first isolation region to be formed in the second region, forming a fin removal masking layer above the first and second regions of the substrate, wherein the fin removal masking layer has an opening positioned above at least a portion of at least one of the first plurality of fins, while masking all of the second plurality of fins in the second region and the space for the first isolation region, and performing an etching process through the first opening to remove the portions of the at least one of the first plurality of fins.

(65) **Prior Publication Data**

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(52) **U.S. Cl.**

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14 Claims, 15 Drawing Sheets

